

Remarks

Claims 1-2, 4-16, and 18-21 are pending in this application.

Reconsideration and allowance in view of the following remarks are respectfully requested.

Claims 1, 12, 15, and 20 are rejected under 35 U.S.C. 102(b) over Nakano (U.S. Patent 5,134,307).

Applicants submit that the rejection under 35 U.S.C. §102(b) over Nakano is defective because Nakano fails to disclose each and every feature of the claimed invention. For example, independent claim 1 recites:

"An inverter system for delivering energy from a source of direct current (dc) to an alternating current (ac) utility, comprising:

a dc/dc converter coupled to the source of dc for synthesizing a time-varying current from the dc, the dc/dc converter comprising a phase-shifted input bridge coupled to the source of dc, the phase-shifted input bridge comprising a first phase leg and a second phase leg;

a controller for controlling a phase relationship between a first voltage waveform output by the first phase leg of the phase-shifted input bridge and a second voltage waveform output by the second phase leg of the phase-shifted input bridge to provide the time-varying current;

an output inductor coupled to the dc/dc converter; and
an inverter coupled to the output inductor for supplying the time-varying current to the ac utility in phase with a voltage of the ac utility."

Independent claims 15 and 20 include similar features.

Nakano fails to disclose, among other features, "an inverter coupled to the output inductor for supplying the time-varying current **to the ac utility in phase with a voltage of the ac utility**." On the contrary, Nakano discloses a uninterruptible power supply for supplying power to a load coupled to load terminals T3 and T4 (see, e.g., col. 4, lines 54-60).

Accordingly, since Nakano fails to disclose each and every feature set forth in independent claims 1, 15, and 20, Applicants request withdrawal of the rejection under 35 U.S.C. 102(b) over Nakano.

Claims 1, 2, 4-16, and 18-21 are rejected under 35 U.S.C. 103(a) over Welches (U.S. Patent 6,404,655) in view of Zhang et al. (US 6,466,458), hereafter "Zhang."

Applicants submit that the rejection under 35 U.S.C. §103(a) over Welches and Zhang is defective because the references, taken alone or in combination, fail to disclose each and every feature of the claims.

As admitted by the Examiner (Office Action, page 3), Welches fails to disclose, among other features, a "dc/dc converter coupled to the source of dc for synthesizing a time-varying current from the dc, the dc/dc converter comprising a **phase-shifted input bridge coupled to the source of dc, the phase-shifted input bridge comprising a first phase leg and a second phase leg**," and a "**controller for controlling a phase relationship between a first voltage waveform output by the first phase leg of the phase-shifted**

input bridge and a second voltage waveform output by the second phase leg of the phase-shifted input bridge to provide the time-varying current."

On the contrary, as can readily ascertained from FIGS. 4 or 5 of Welches, a constant voltage (ignoring switching frequency ripple) is provided across the capacitors C3 and C4 at the output of Welches' DC/DC converter 30. Thus, Welches does not disclose either the claimed phase shifted input bridge or the outputting of a time-varying current. In the present invention, however, a phase-shifted input bridge, comprising first and second phase legs, and a controller are used to create a **time varying current** (ignoring switching frequency ripple; see, e.g., FIG. 7) at the output of the DC/DC converter and in the output inductor L4.

In order to remedy the glaring deficiencies of Welches, the Examiner relies on the teachings of Zhang. As in Welches, Zhang (FIG. 3) discloses the provision of a constant voltage across the capacitor C2 at the output of the DC/DC converter. Thus, for sake of argument, even if it would be obvious to one skilled in the art to combine Welches and Zhang in the manner suggested by the Examiner, the resultant system would still fail to provide a **time varying current** at the output of the DC/DC converter.

Accordingly, Applicants submit that independent claim 1 and its dependent claims are allowable. Further, Applicants submit that independent claims 15 and 20 and their dependent claims are allowable for reasons similar to those set forth above with regard to independent claim 1.

In light of the above, Applicants respectfully submit that all claims are in condition for allowance. Should the Examiner require anything further to place the application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the number listed below.

Respectfully submitted,



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